Jan. 5, 2001 Vol. 40, No. 1

Spaceport News

America's gateway to the universe. Leading the world in preparing and launching missions to Earth and beyond.

http://www-pao.ksc.nasa.gov/kscpao/snews/snewstoc.htm John F. Kennedy Space Center

KSC 2001: the year ahead

By Roy Bridges

As we begin the real first year of the new millennium for our civilization, all of us at the Kennedy Space Center continue to hold the future of NASA and our space exploration and development mission in our hands.

We have incredibly important responsibilities in protecting the safety of our astronauts, our robotic spacecraft, our unique facilities and the people who operate them, and the public who live and work near our reservation or beneath the path of one of our launch vehicles and its spacecraft.

We plan to launch eight Space Shuttle and eleven Expendable Launch Vehicle missions this calendar year.

We will integrate and test additional major elements of the International Space Station such as the Airlock module.

We will also begin the second series of the major integrated tests for the station called Multiple Element Integrated Test II. This series will focus on the trusses that will form the long wings of the Station to provide additional power and thermal control.

We also have recognition for another mission for the Center.

Recognizing our capabilities for technology development, the Agency recently amended our mission statement.

It now reads Space Launch Operations and Spaceport and Range Technologies.

We have won a significant role in managing the Operations and Range Project for Marshall Space Flight Center's new Space Launch Initiative. The role fits our new mission well and helps us see progress in achieving our vision of evolving to be NASA's Spaceport Technology Center.

We will be working together with partners at other centers, academia and industry to develop and test the technologies to enable second and third generation Reusable Launch Vehicles that will be safer and less costly by orders of magnitude.

Also, working with the Air Force and other range operators, we will tackle some problems on the ranges to enable much needed flexibility and capacity by developing and prototyping capabilities such as those to allow a space-based range to become a reality.

There are exciting new construction projects nearing ground breaking, such as the new Space Experiments Research and Processing Laboratory (SERPL). It will provide 100,000 square feet of world-class laboratory space to support researchers doing biotechnology experiments on the Space

(See 2001, Page 7)

"We are very blessed to be engaged in such important work for our nation and civilization. Your passion for the success of our significant responsibilities will continue to be a driving force in our progress as a spacefaring people."

Roy Bridges
KSC Director

Inside

STS-98 to deliver Destiny

STS-98, the 23rd flight of Space Shuttle Atlantis, will launch the second of the U.S. pressurized modules, the Destiny Laboratory.

At press time, the launch from Kennedy Space Center was set for Jan. 18 at 2:44 EST, but was under review. Managers expected a delay of up to a few days.

The U.S. Lab will be attached to the Unity node on orbit using the Shuttle's robotic arm. Atlantis and her crew of five will spend six days docked to the Space Station while the attachment is undertaken.

Three extravehicular activities will be conducted to complete its assembly.

The addition of the Destiny module will expand the Station's power, life support and attitude control capabilities.

At 28 feet in length and 14 feet in diameter, and weighing more than 32,000 pounds, the U.S. Lab is about the size of a large business jet's fuselage.

It will be equipped with five of its 11 system's racks when it is carried into orbit during the STS-98 mission.

Six additional racks will follow on a subsequent Shuttle mission and will be delivered in one of three Multi-Purpose Logistics Modules

(See STS-98, Page 3)

Workers and the STS-98 crew gathered in the Space Station Processing Facility for a ceremony that turned over the "key" for the U.S. Lab Destiny to NASA.

New JPMO chairman: Gen. Pettit

Kennedy Space Center and the 45th Space Wing are partners in the management of the Joint Base Operations and Support Contract (J-BOSC), which is now in its third year.

The contract provides a single set of base operations and support services requirements for KSC, Cape Canaveral Air Force Station (CCAFS) and Patrick Air Force Base (PAFB). The Joint Performance Management Office (JPMO) manages the contract.

During the first two years of the partnership, KSC Director Roy Bridges was the Chairman of the Board for the JPMO and Brig. Gen. Donald Pettit, Commander of the 45th Space Wing, was Vice Chairman. Now those responsibilities have been rotated and Pettit will be Chairman for the next two years.

Spaceport News asked Pettit to give KSC team members an update on the JPMO and J-BOSC and to share his vision for the partnership between KSC and the 45th Space Wing.

"I foresee, someday, that ours will be only one of many spaceports around the world. Technology will improve to make spacelift much more affordable and accessible not only for the military, NASA, commercial industry, but also the private citizen."

Brig. Gen. Donald Pettit
Commander of the 45th Space Wing

Q. What do you consider to be the greatest accomplishments of the JPMO and J-BOSC in the past two years?

A. The answer to that is simple. The JPMO and J-BOSC successfully proved that "jointness" was the right path for the future. The formal joining of government entities and consolidation of contract requirements was a bold and innovative step necessary to build a national Spaceport here at Cape Canaveral.

The partnering of the 45th Space Wing and Kennedy Space Center through the creation of a JPMO and J-BOSC was a means to go beyond the traditional cooperative arrangements. I am convinced that future Spaceport generations will look back and say what a big difference we made for them by choosing to go down this new path.

Think about what was done in the last two years. A new joint government organization, JPMO, was formed that merged employees from different cultures – 45th Space Wing military and civilian and KSC civilian to work together in one location managing a new joint contract.

The JPMO literally had to develop organizational and business systems that would work for both the Air Force and NASA. This included developing procedures for daily operations such as personnel and financial management, as well as, processes for contractor surveillance and strategic planning that were supportive of guidance from both Agencies.

Like JPMO, the J-BOSC also involved the merging of cultures from the employees who had worked on the previous contract. The major focus during its first two years has been to streamline base operations between KSC and CCAFS – to take advantage of geographic closeness and truly bridge the "river gap."

I'm sure you've noticed that the J-BOSC merged security forces and fire protection services. They also combined emergency 911 capabilities and developed integrated work control and financial management system with lots of automated on-line reporting capability for customers and users. They were committed to making their customer's life simpler with a one-stop phone number easily remembered (476-HELP).

Finally, the best part of the J-BOSC accomplishments is that the government has saved money and smartly re-invested a portion of these savings, nearly $10 million, into Spaceport installation improvement projects such as new fire trucks, a mobile command post vehicle, electrical meters and expanded fire alarm communication architecture.

Q. What further accomplishments do you expect in the near term?

A. The great part about being new is that there is always plenty to do and the JPMO/J-BOSC team will continue to build on their successes in several different ways.

First, they will complete the transition of the planned PAFB base services into the contract.

The contract was intended to cover all three geographic areas, but the PAFB work was scheduled to begin primarily in year three with a small amount in year four.

The major transition of PAFB services, including maintenance of military family housing, took place in October, but the complete implementation and cultural adaptation will require concentrated JPMO/J-BOSC effort in the upcoming months.

A far-reaching initiative involving the JPMO/J-BOSC team will be the validation phase for the recently delivered contractor "catalog of services." Successful validation results will pave the way for implementation of fixed-price services for Spaceport customers.

In the past, our efforts have been limited to "launch support" services. This catalog of services will expand the scope to include a variety of base services that will be required by Spaceport customers.

I believe JPMO in conjunction with the newly formed Joint Planning and Customer Service Office will make great strides in developing better business practices to support new ideas as we expand beyond the current government and heritage commercial programs.

The Spaceport needs to provide an environment that will encourage the contractor to seek additional commercial opportunities to provide and grow spacelift capability without the infusion of government dollars.

Q. What are your goals for the JPMO during your two-year tenure as Chairman?

A. The JPMO has provided a successful test case for inter-Agency partnering. My goal for JPMO is to continue to "push the envelope" to the next level. It's time during the next two years to tackle some of the high-hanging fruit that was put on the back burner during the initial transformation period.

It's time to look at our consolidated government and contractor functions to determine the impact of different Agency possibilities, regulation, instructions and guidance.

For example, we have successfully consolidated functions but in many cases they are performed differently for each Agency based on their governing directives.

I want JPMO/JBOSC to bring forward areas where these differences don't make good sense from a business or operational perspective.

Q. What opportunities for future cooperation with KSC do you see in addition to the JPMO?

(See PETTIT, Page 8)

MarsPort 2001 competition spawns ideas

Although it may be years before humans are sent to land again on the Moon or for the first time on an asteroid, Mars or another planet, NASA is already considering what technologies will be needed to get astronauts to those destinations and back safely.

Various scenarios for transport, landing and return are being explored by planners, scientists and engineers.

To help spur creative solutions to specific technology challenges in one such scenario, Kennedy Space Center is partnering with Florida Space Grant Consortium and Texas Space Grant Consortium to sponsor the MarsPort 2001 design competition.

Universities across the nation were asked to submit their conceptual design for a propellant and life support production system to be used on the surface of Mars.

Such a system would be sent to Mars ahead of the first manned mission so that the consumables would be produced, stored and made ready for use to assist astronauts during their stay and return from Mars.

The conceptual designs of six university teams were recently selected by a group of judges, engineers from KSC and Johnson Space Center.

The chosen student and faculty teams represent Embry-Riddle Aeronautical University, Cornell University, University of Wisconsin at Madison, Georgia Institute of Technology, University of Tennessee at Knoxville and George Washington University.

Now those teams are working on an engineering analysis and detailed designs of their concepts.

The final designs will be judged for merit in May.

"We received some extremely creative entries and we're looking forward to seeing how the university teams work out the details," said Mike O'Neal, NASA exploration lead from KSC's Spaceport Technology Business Development Office. "We're looking for innovative ideas and out-of-the-box thinking. These student and faculty teams have access to ideas about emerging technologies and they can incorporate those into their designs."

An artist's conception of the MarsPort of the future. In one exploration scenario being considered by NASA, a propellant and life support production system would be sent to the surface of Mars to begin production before the first humans arrive. To help spur innovative designs for such a system, Kennedy Space Center is partnering with Florida Space Grant Consortium and Texas Space Grant Consortium to sponsor the MarsPort 2001 design competition.

The competition was created to generate ideas that can benefit the space program both now and in the future.

"At Kennedy Space Center in particular, we are always looking for new ways to improve our processes in the liquefaction, storage and distribution of propellants, so looking at what would be required for such a system on Mars is an analogy KSC can leverage its skills on," O'Neal said.

Another purpose of MarsPort 2001 is to introduce students to the space program and its career potential, said Sam Durrance, director of the Florida Space Grant Consortium.

"This is an invaluable experience for students to do some hands-on design work on a real-life engineering challenge," Durrance said.

In addition to designing the system, the teams are required to publicize their projects to help educate others.

Representatives of the teams will visit KSC in May to tour the Center and to participate in a final defense of their system's design.

STS-98 ...

(Continued from Page 1)

supplied to NASA by the Italian Space Agency.

Thirteen of Destiny's racks are specifically designed to initially support experiments in microgravity and life sciences.

Eleven will house the systems and resources required for supporting the Lab, such as power, cooling water, temperature and humidity control, communications and tracking equipment, and air revitilization for removal of carbon dioxide and replenishment of oxygen.

One of the racks will be used specifically for health maintenance of the crew and the control racks will be used for Canada's mobile servicing system.

The U.S. Lab's first science facilities include

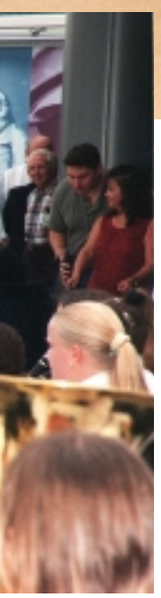
- the Human Research Facility – where scientists will assess crew health and how the human body responds and adapts to microgravity;
- the Fluids and Combustion Facility – where experiments will be conducted to study the uses of microgravity for improvements in production of semiconductor crystals, glass fiber and energy;
- the Biotechnology Facility – where research will be conducted for improved engineering and technology on protein crystal growth in microgravity for the development of more effective medications;
- the Materials Science Facility – where scientists will study the atomic and molecular structures of materials in microgravity;
- and the Optical Window Rack Facility – where crews will utilize the highest quality optical glass ever used for testing in space through the use of cameras, sensors and other devices employed in the identification of pollution sources and monitoring of environmental conditions.

Members of the crew are Commander Kenneth Cockrell, Pilot Mark Polansky and Mission Specialists Robert Curbeam, Thomas Jones and Marsha Ivins.

KSC Christn

Kennedy Space Center team members gathered at the KSC Visitor Comple
Space Education Building on Dec. 12 for the annual KSC Christmas Coffee.
event was well-attended by KSC employees and retirees.

nas Coffee



x's Early
The

Traditional Holiday Dinner

NASA's Traditional Holiday dinner was held at KARS Park I on Dec. 13. The event, held for NASA civil service personnel, was sponsored by the Combined Federal Campaign Victory Committee and the Change Leaders Network. The NASA Exchange council funded the event. It was catered by Delaware North Park Services.

Integrated Truss Structure S3

The Integrated Truss Structure S3 is offloaded from the Super Guppy aircraft that brought it to KSC from Tulsa, Okla. The S3 was built by The Boeing Co. The truss was transported to the Operations and Checkout Building. The second starboard truss segment of the International Space Station, the S3 truss is scheduled to be added to the Station in April 2003.

2001 ...

(Continued from Page 1)

Station. This facility also moves our partnership with the State of Florida into high gear.

Working with the Florida Space Research Institute and its lead university, the University of Florida, we will do much ground-based research in this new facility and elsewhere on KSC.

Another significant ground breaking will be an Operational Support Building II in the LC-39 area to provide housing for our workforce and eliminate trailer parks that are long past their retirement age.

Along with several smaller projects in various phases of design and construction, this facility will reduce our trailer population from nearly 400,000 to less than 50,000 square feet.

With your help, we will make major strides in achieving certification in OSHA's Voluntary Protection Program (VPP) this year.

Everyone will need to be engaged in our safety and health program to achieve it.

By doing the hard work involved, we will make KSC a much safer and healthier place to work in keeping with our Guiding Principle of Safety and Health First.

I wish each of you and your loved ones much success, health and happiness in this New Year. We have a lot of exciting things to do.

We are very blessed to be engaged in such important work for our nation and civilization.

Your passion for the success of our significant responsibilities will continue to be a driving force in our progress as a spacefaring people.

PETTIT ...

(Continued from Page 2)

A. We are already moving towards a stronger and larger partnership with KSC. Last June, Mr. Bridges and I signed an agreement that established the Joint Planning and Customer Service Office.

Like the JPMO, this new office is staffed with both Air Force and NASA civil servants. Soon, we hope to formally add the State of Florida to the office. One of the major responsibilities of this new joint office is to help us collectively plan for the future Spaceport.

We are already working on a joint 50-year comprehensive Spaceport master plan that integrates the needs of all major stakeholders, not just the Air Force. This new office will be working to streamline business processes between our two agencies from strategic planning, customer support, policies and even changing some laws. I would not be surprised if this new concept spins off more joint AF/NASA offices.

Q. What is your vision for the future of the Spaceport?

A. I foresee, someday, that ours will be only one of many spaceports around the world. Technology will improve to make spacelift much more affordable and accessible not only for the military, NASA and commercial industry, but also the private citizen.

We will be able to travel on business or recreation anywhere in the world within two hours. Our grandchildren will go to Cape Canaveral Spaceport to board a shuttle cruiser to low-earth orbit for their honeymoon.

We have the opportunity here to prototype the future spaceport. I believe it will be modern, economical and user-friendly, conducting several spacelift operations every day. Above all, we will be the premier spaceport in the world.

Q. How will KSC and the 45th Space Wing work with its other partners to make that a reality?

A. We are already going in that direction with the establishment of our Joint Planning and Customer Service Office. A principal mission of this joint Air Force/NASA/State office is to facilitate and integrate development of our future Spaceport. They are working hard to plan for our future and to streamline or reengineer, if necessary, our business processes to bring our agencies' business operations closer together.

The new forum that we will use to do this began about a year ago when Mr. Bridges and I established a joint board known as the Cape Canaveral Spaceport Board of Directors. The Board has a broad scope that includes providing leadership oversight to our two joint offices, the JPMO and the JPCSO.

The Board's membership includes advisors from the Spaceport Florida Authority, Enterprise Florida, a new industry-lead group called the Florida Space Commerce Board, and a State-sponsored academia and the Florida Space Research Institute.

As you can see we have a broad structure set up to address customer issues, joint planning and joint base support operation.

The Board also oversees another new customer advocacy forum known as the Customer Focus Team. The mission of the Customer Focus Team is to partner with commercial industry and the State of Florida to enable safe, world-class launch processing, payload processing, test, launch, and technology development and support services.

The Team's Customer Advocates seek out customer input and feedback to focus the Spaceport on those areas of concerns that mean the most to our customers. The Team's Process Owner champions are partnering with the Customer Advocates and the customers themselves to design and implement improvements across the Spaceport. The teams have only recently begun their work on five high priority areas of interest to our customers.

Another forum that we are using to partner with KSC and Florida is our annual Cape Canaveral Spaceport Symposium. We just held our sixth symposium on Nov. 14 and 15. The symposium focuses on two-way communication between all Spaceport stakeholders on areas of interest to them.

Overall, I was very impressed by the stimulating discussions from the panels and guest speakers. We have come a long way in the last two years and this great team spirit will guarantee an exciting future for the Cape Canaveral Spaceport.

January Employees of the Month

January employees of the month are pictured from left to right: Jim Herndon, ELV and Payload Carriers Program; Carol Scott, Shuttle Processing Directorate; Cathy Deane, Safety, Health and Independent Assessment Directorate; Christa Casleton, Chief Financial Office; Dave Wilson, Workforce and Diversity Management Office. Employees of the month not pictured are James Belote, Spaceport Services Directorate; and Tommy Mack, Spaceport Engineering and Technology Directorate.

John F. Kennedy Space Center

Spaceport News

Spaceport News is an official publication of the Kennedy Space Center and is published on alternate Fridays by the Public Affairs Office in the interest of KSC civil service and contractor employees.

Contributions are welcome and should be submitted two weeks before publication to the Media Services Branch, XAE-1. E-mail submissions can be sent to Katharine.Hagood-1@ksc.nasa.gov

Managing editor. . . . . Bruce Buckingham
Editor. . . . . Kathy Hagood

Editorial support provided by InDyne Inc. Writers Group.
NASA at KSC is located on the Internet at *http://www.ksc.nasa.gov*

USGPO: 533-128/00048